The Technical Challenges of Homeland Security

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V. Pres. Technology

Engineered Support Systems Inc

Subsidiary Overview

Engineered Support Systems, Inc.

- KECO
- Marlo
- Fermont
- UPSI
- EASI
- Radian
- ESSIbuy.com
- SEI
- TAMSCO

ENGINEERED AIR SYSTEMS, INC.

Fermont

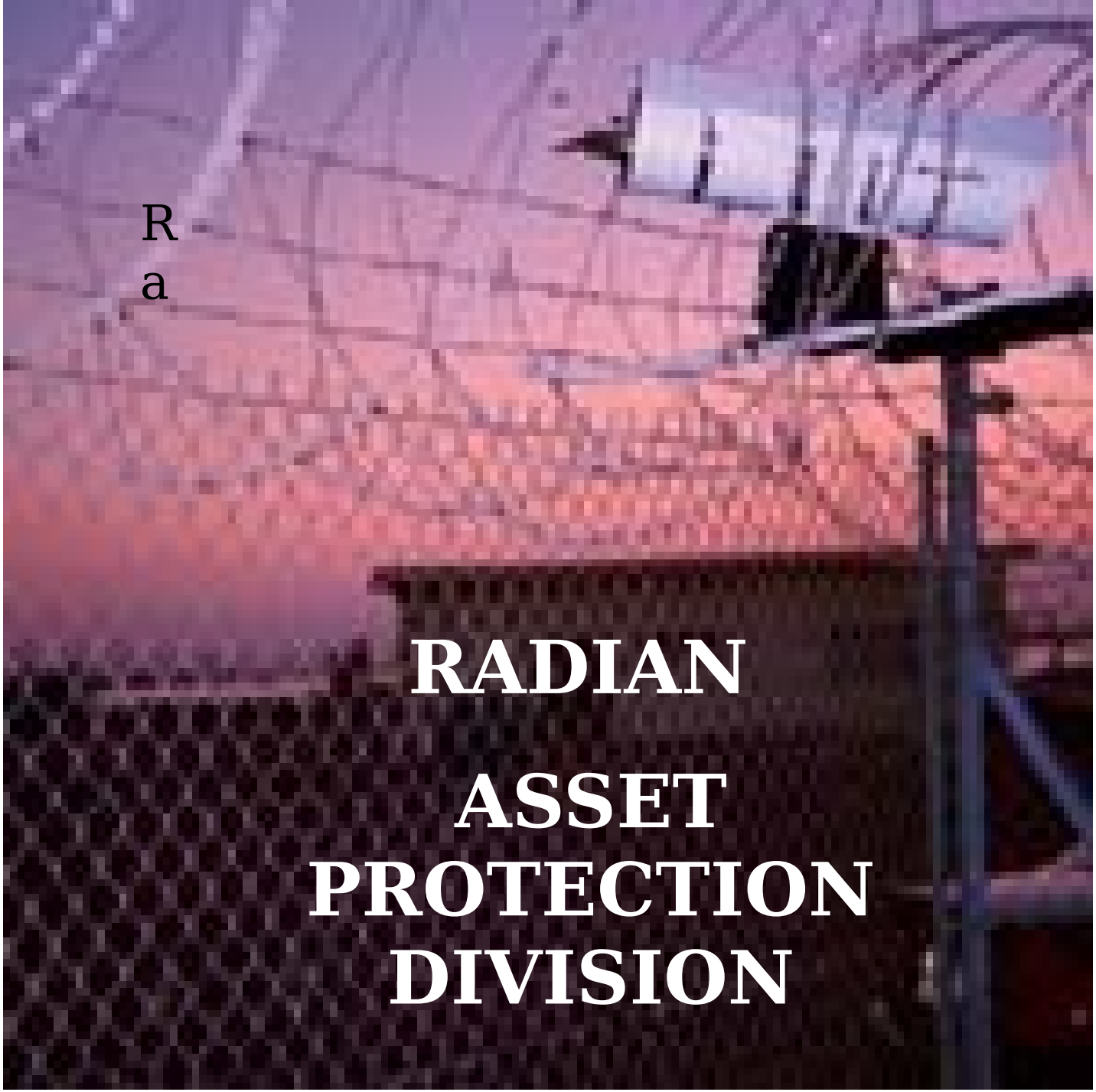
Systems & Electronics Inc.

Engineered Support Systems, Inc.

Areas of Expertise

- Systems integration
- Electronics (Radio & target acquisition systems)
- Automatic test equipment
- Automation & material handling
- Heavy military mechanical systems (Trailers, logistics)
- Water & customized HVAV & environmental control systems
- Water & fuel distribution systems
- Chillers
- Pumps
- Fan coil units / assemblies
- Water purification systems
- Portable power generators
- Uninterruptible power suppliers
- NBC collective protection
- Asset protection
- Parts re-inventory
- Logistics & maintenance
- Diagnostics & prognostics
- Interactive electronic tech manuals
- Training
- E commerce

ESSI
Engineered Support Systems, Inc.
The Military Doesn't Leave Home Without Us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a
RADIAN
ASSET
PROTECTION
DIVISION

Outline

- Terrorist Objectives
- The Homeland Security Dilemma
- The Technical Challenges Facing Homeland Security
- Summary

Phases of Homeland Security

- Vigilance/Prevention/Security
- Under Attack
- First Reaction – Emergency Response
- Recovery/Stabilizing
- Return to normal

Terrorist Aims

- Mass Destruction
- Mass Disruption
- “Hitting” high profile/asset targets

Critical Infrastructure Dependencies

- Energy
- Telecommunications
- Transportation
- Banking and Finance
- Continuity of Government Services
- Water Supply Systems
- Gas and Oil Production
- Emergency Services

Technology Challenge

(Vigilance/Prevention/Security)

- **Is it possible to make a security system that is transparent to the law abiding citizen – provides unencumbered freedom of movement – while maintaining privacy – yet will recognize people of concern and block access to buildings, public works, etc to those people?**

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- **Are the FBI/CIA best equipped to build such a system?**

Homeland Defense Soft Computing Technologies

- Computational Linguistics
- Fuzzy Logic
- Data Mining
- Neural Networks
- Expert Systems
- Evolutionary Systems
- Semantic Webs & Data Webs
- Biometrics
- Intelligent Agents

Technology Challenge

(Vigilance/Prevention/Security)

- **Every threat that requires people screening is currently monitored by a different system (explosives, weapons, biological, chemical, nuclear, radiological) – is it possible to design a system that can screen people for all possible threats, fast and at a reasonable cost, with acceptable (economical) false alarm rates, and with zero misses**?

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- **Is it possible to secure and protect our telecommunications system? And our internet system? And provide cyber security?**

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- **Is it possible to secure and protect our transportation infrastructure?**

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- **Decontamination. Is it economically feasible to effectively decontaminate large areas, large buildings etc**

Technology Challenge

(First Responders)

- Training of first responders – Is simulation an adequate/effective way of training first responders?
- Who should be trained?
- What foreknowledge do the responders need to be adequately equipped to handle a disaster?

Summary

- **The technical challenges presented by Homeland Defense are both vast, multi disciplined and dimensional**
- **Some we are only just starting to address**
- **Some are in the very difficult category**
- **Some might be in the too difficult class**
- **We must not slip into solving only those problems that we can solve at the expense of the others**
- **There are some tough challenges**